General

Guideline Title

Stroke management in the long term care setting.

Bibliographic Source(s)

American Medical Directors Association (AMDA). Stroke management in the long-term care setting. Columbia (MD): American Medical Directors Association (AMDA); 2011. 46 p. [143 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: American Medical Directors Association (AMDA). Stroke management and prevention in the long-term care setting. Columbia (MD): American Medical Directors Association (AMDA); 2005. 42 p.

Recommendations

Major Recommendations

Note from the American Medical Directors Association (AMDA) and the National Guideline Clearinghouse (NGC): The original full-text guideline provides an algorithm on "Stroke Management in the Long-Term Care Setting" to be used in conjunction with the written text. Refer to the "Guideline Availability" field for information on obtaining the algorithm, as well as the full text of the guideline, which provides additional details.

Stroke management falls into three categories of urgency:

- Acute stroke is a medical emergency that should be addressed immediately.
- Post-stroke involves care for a patient who has had a stroke recently.
- Stroke prevention involves measures to prevent a first or recurrent stroke.

Certain steps in this guideline are particularly relevant in the context of an acute stroke, whereas others are applicable in the post-stroke or stroke prevention context. These differences are labeled in the text.

Recognition

Step 1 (Acute Stroke)

Does the patient show signs or symptoms of an acute stroke?

Common presentations of an acute stroke include:

- Sudden confusion, difficulty speaking, or difficulty understanding speech
- Sudden difficulty seeing out of one eye
- Sudden difficulty walking, severe dizziness, or loss of balance or coordination
- Sudden numbness or weakness of the face or in an arm or leg, especially if confined to one side of the body
- Sudden severe headache with no other readily identifiable cause

If at any time a patient displays any of these acute neurological symptoms, go immediately to Step 4.

Step 2 (Post Stroke)

Has the patient had a previous stroke or a transient ischemic attack (TIA)?

A patient with a history of stroke or TIA is at high risk for a recurrent stroke. If a newly admitted patient has a history of stroke or TIA, the interdisciplinary team should review available medical records to determine whether the patient has received an appropriate diagnostic evaluation. If the patient has been evaluated appropriately, go to Step 7. If not, go to Step 6.

Step 3 (Stroke Prevention)

Does the patient have risk factors for stroke?

Many long-term care (LTC) patients who have not had a stroke or TIA may have one or more potentially modifiable risk factors for stroke (see table below). Identifying and treating modifiable risk factors is an effective way to reduce the chance of a first stroke or recurrent stroke. If the patient has not had a stroke but has potentially modifiable risk factors for stroke, go to Step 14.

Table: Potentially Modifiable Risk Factors for Stroke

- Hypertension
- Atrial fibrillation
- Hyperlipidemia
- Diabetes mellitus
- Estrogen use
- Carotid artery stenosis
- Cigarette smoking
- Heavy alcohol use
- Inactivity
- Obesity
- Sleep apnea

Assessment

Step 4 (Acute Stroke)

Confirm that the patient is suffering an acute stroke.

- Clarify and describe the patient's signs and symptoms. Rapidly but thoroughly assess the patient who has signs or symptoms of an acute stroke. Carefully describe the patient's current level of consciousness, cognitive ability, speech, physical function, and physical condition.
- Determine whether the patient's signs and symptoms are caused by a condition that can resemble a stroke. Numerous conditions common in the LTC setting can cause signs and symptoms that resemble an acute stroke (see Table 3 in the original guideline document). If the patient has hypoxia, hypoglycemia, hypotension, or another acute medical condition that may mimic an acute stroke, go to Step 9.
- Reassess the patient to determine whether symptoms have resolved. If the patient's symptoms do not resolve within 20 minutes, go to Step 5. If the patient's symptoms are resolving quickly without specific treatment, the symptoms may have been caused by a TIA. A TIA is still considered a brain attack. Patients who have a TIA are at high risk for stroke and should be evaluated promptly and thoroughly (Step 6).

Step 5 (Acute Stroke)

Decide whether it would be appropriate to transfer the patient to the hospital for further evaluation and treatment.

Not all patients experiencing an acute stroke are appropriate candidates for transfer. Hospital transfers for LTC patients with an acute stroke may produce both benefits and risks (see Table 4 in the original guideline document). The practitioner, family or surrogate decision maker, and the patient (if possible) should be involved in deciding whether it is appropriate to transfer the patient to a hospital.

Step 6 (Acute Stroke)

Perform a diagnostic evaluation for acute stroke.

The diagnostic evaluation may take place at the hospital (if the patient has been transferred) or at the LTC facility (if it has been decided not to transfer the patient).

Table 5 in the original guideline lists recommended and optional diagnostic tests for the initial evaluation of patients presenting to a hospital with stroke signs and symptoms.

Step 7 (Acute Stroke, Post Stroke)

Perform an interdisciplinary functional assessment.

If the diagnostic evaluation confirms the occurrence of a stroke or TIA, perform a broad interdisciplinary assessment of the patient. Transitions from one level of care to another or from one care facility to another should trigger an interdisciplinary assessment.

The findings of this assessment should guide decision making about further diagnostic testing, treatment, rehabilitation, prevention, and monitoring (see Table 6 in the original guideline document).

The assessment should characterize the patient's:

- Cognitive and psychosocial abilities and impairments, including safety awareness
- Physical abilities and impairments, including ability to perform activities of daily living (ADLs)
- Current and expected level of physical endurance
- Presence and severity of chronic medical conditions
- Risk of stroke complications (e.g., bladder and bowel dysfunction, deep vein thrombosis [DVT], dysphagia, falls, and pressure ulcer)
- Presence of stroke complications (e.g., urinary tract infection [UTI], DVT, aspiration, malnutrition, pain, depression, dementia, and skin breakdown)

Step 8 (Acute Stroke, Post Stroke)

Summarize the patient's condition.

When a patient is admitted to the facility with a history of stroke, it is appropriate to review all relevant information that has been identified thus far.

Treatment

Step 9 (Acute Stroke)

Treat medical conditions that may mimic an acute stroke.

If the assessment identifies an acute medical condition such as hypoglycemia, hypotension, or hypoxia, treat that condition immediately. If this treatment begins to reverse the patient's neurological symptoms within 20 minutes, nursing staff should notify the attending physician and discuss the need for further evaluation or treatment. If symptoms suggestive of a stroke persist after 20 minutes, go back to Step 5.

Step 10 (Acute Stroke, Post Stroke)

Develop and implement a care plan to identify and address stroke-related complications.

Table 8 in the original guideline document lists several common stroke complications and some preventive interventions that may be considered as part of a plan to prevent stroke-related complications. The complications include:

- Pneumonia
- Urinary tract infection
- Deep vein thrombosis
- Pressure ulcer
- Depression

- Spasticity or contracture
- Shoulder displacement

Step 11 (Acute Stroke, Post Stroke)

Develop and implement an interdisciplinary treatment plan that treats stroke complications.

When the assessment identifies complications of stroke, implement appropriate curative, restorative, or palliative treatment on the basis of a shared decision that reflects the patient's wishes and treatment goals.

Step 12 (Post Stroke)

Develop and implement a rehabilitation plan to maximize function.

After the patient with an acute stroke has been stabilized, the interdisciplinary team can determine the patient's specific rehabilitation needs. Stroke rehabilitation may help the patient to optimize physical, cognitive, psychosocial, and vocational functioning (see Table 10 in the original guideline document). It is important to develop the rehabilitation plan in collaboration with the patient and family and to individualize each patient's rehabilitation regimen to reflect the patient's prognosis, comorbid conditions, and personal goals.

Rehabilitation and restorative therapies may include:

- Occupational therapy to enhance dexterity of the arms and hands
- Physical therapy to improve motor strength and promote independence in ADLs
- Speech therapy to optimize communication, chewing, and swallowing
- Restorative nursing programs, which could include
    - Range of motion (passive)
    - Range of motion (active)
    - Splint or brace assistance
    - Bed mobility
    - Transfer
    - Walking
    - Dressing and/or grooming
    - Eating and/or swallowing
    - Amputation/prosthesis care
    - Communication

Step 13 (Post Stroke)

Develop and implement a plan for preventing recurrent strokes.

Decisions about using interventions to prevent recurrent stroke should be based on the causes of the patient's previous stroke, an assessment of the patient's modifiable risk factors, and the benefits and risks of relevant treatment options.

Step 14 (Stroke Prevention)

Address stroke risk factors.

Lifestyle changes, diet, exercise, and treatment to address modifiable risk factors can reduce the risk of a recurrent stroke and postpone a first stroke.

Appendix 1 in the original guideline document provides examples of risk factors, interventions, treatment goals, and monitoring strategies for addressing modifiable stroke risk factors.

Monitoring

Step 15

Monitor and periodically document the physical, functional, and psychosocial progress of the patient with an old or new stroke.

Treatment goals may change as the patient either recovers from the stroke or experiences decline. The interdisciplinary team should regularly re-evaluate both the treatment goals and progress made toward those goals. The team should monitor the continued appropriateness of the treatment

plan by taking into consideration the patient's clinical condition and ability to meet treatment goals, as well as the presence of adverse treatment effects.

Step 16

Monitor the patient to ensure that modifiable risk factors for stroke are adequately controlled.

Reassess the treatment plan regularly to ensure that modifiable risk factors for a first or recurrent stroke have been controlled to the extent feasible, in accordance with the patient's treatment plan and goals.

Step 17

Monitor the facility's management of stroke and stroke risk factors.

The successful prevention and management of stroke depend on staff education and on interdisciplinary assessment and treatment. Facilities may wish to incorporate stroke quality-of-care indicators into their quality improvement process. Possible indicators include:

- Staff awareness of symptoms of acute stroke
- Timeliness of response to possible signs and symptoms of acute stroke
- Documentation of the patient's care goals
- Implementation of interventions to prevent acute complications of stroke
- Occurrence of common complications of stroke
- Adequacy of control of modifiable stroke risk factors

Clinical Algorithm(s)

An algorithm is provided in the original guideline document for stroke management in the long-term care setting.

Scope

Disease/Condition(s)

Acute stroke
- Ischemic stroke
- Hemorrhagic stroke

Post-stroke complications

Guideline Category

Diagnosis

Evaluation

Management

Prevention

Rehabilitation

Risk Assessment

Treatment

Clinical Specialty

Emergency Medicine

Geriatrics

Internal Medicine

Neurology

Nursing

Pharmacology

Physical Medicine and Rehabilitation

Preventive Medicine

Psychiatry

Speech-Language Pathology

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Dietitians

Health Care Providers

Nurses

Occupational Therapists

Pharmacists

Physical Therapists

Physician Assistants

Physicians

Social Workers

Speech-Language Pathologists

Guideline Objective(s)

To improve the quality of care for patients with stroke in long-term care settings
To guide care decisions and to define roles and responsibilities of appropriate care staff
To reduce the risk of recurrent strokes

Target Population

Residents of long-term care facilities

Interventions and Practices Considered

Prevention/Risk Assessment

1. Assessment of risk factors for stroke
2. Preventive measures

Evaluation/Diagnosis

1. Assessment and description of resident's signs and symptoms
2. Medical history
3. Assessment for conditions that mimic stroke
4. Assessment of appropriateness of transferring the patient to a hospital
5. Diagnostic evaluation for acute stroke
6. Interdisciplinary functional assessment
7. Summarizing the patient's condition

Treatment/Rehabilitation/Management

1. Treatment of medical conditions that may accompany or mimic an acute stroke
2. Interdisciplinary care plan and treatment for stroke complications, including appropriate curative, restorative, or palliative measures
3. Rehabilitation plan and follow up
4. Implementation of plan for prevention of recurrent stroke
5. Monitoring the patient's physical, functional, and psychosocial progress
6. Monitoring the patient's modifiable risk factors
7. Monitoring the facility's management of stroke and stroke risk factors

Major Outcomes Considered

- Cause of death among stroke survivors
- Risk for stroke or stroke recurrence
- Risk and incidence of stroke complications, such as pneumonia, urinary tract infection, urinary incontinence and bladder dysfunction, dementia, deep vein thrombosis, depression, pressure ulcers
- Stroke-related mortality
- Effect of antiplatelet therapy
- Benefits and risks of interventions used to prevent/treat strokes

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Medline, PubMed, and geriatric-specific journals such as the Journal of the American Medical Directors Association (JAMDA), Annals of Long Term Care, and Journal of the American Geriatrics Society (JAGS) were searched from May 2009 through February 2011. Studies were included if they met the following criteria:

- Studies that are valid, consistent, applicable and clinically relevant
- Studies where the recommendation is supported by fair evidence (based on studies that are valid, but there are some concerns about the volume, consistency, applicability and clinical relevance of the evidence that may cause some uncertainty but are not likely to be overturned by other evidence)

Searches were specific to the guideline topic under consideration.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Review

Review of Published Meta-Analyses

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Original guidelines are developed by interdisciplinary workgroups, using a process that combines evidence and consensus-based approaches. Workgroups include practitioners and others involved in patient care in long-term care facilities. Beginning with pertinent literature searches for articles and information related to the guideline subject, and a draft outline/framework, each group works to make a concise, usable guideline that is tailored to the long-term care setting. Because scientific research in the long-term care population is limited, many recommendations are applied research of older adults and geriatric medicine. Some recommendations are based on the expert consensus opinion of practitioners and geriatric experts in the field.

Guideline revisions are recommended under the direction of the Clinical Practice Guideline (CPG) Steering Committee. The Steering Committee reviews any American Medical Directors Association (AMDA) guidelines that are three years old prior to an annual Steering Committee meeting to determine if the CPG is current. (A thorough literature review is done for each CPG as well to ascertain if the data within is still current.) The AMDA Clinical Practice Committee Chair selects the guidelines to be revised/created based on 1) the Steering Committee recommendations, 2) data collected, and 3) an assessment of the difficulty of development and relevance to the AMDA membership. The Board of Directors has final approval. The guideline revision process is similar to the original guideline process, except the workgroup starts with the original guideline (or last revision) as a basis to begin with.

Rating Scheme for the Strength of the Recommendations

Not applicable

Cost Analysis

The guideline developers reviewed published cost analyses.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

All American Medical Directors Association (AMDA) clinical practice guidelines undergo external review. The draft guideline is sent to approximately 175+ reviewers. These reviewers include AMDA physician members and independent physicians, specialists, and organizations that are knowledgeable of the guideline topic and the long-term care setting.

AMDA's guidelines are supported by the following associations/organizations, who are members of its Clinical Practice Guideline Steering Committee. These associations/organizations all have representatives who participate in the external review phase and officially sign off on the guideline before publication: American Association of Homes and Services for the Aging (Now LeadingAge); American College of Health Care Administrators; American Geriatrics Society; American Health Care Association; American Society of Consultant Pharmacists; Gerontological Advanced Practice Nurses Association; Direct Care Alliance; National Association of Directors of Nursing Administration in Long-Term Care; National Association of Health Care Assistants.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

The guideline was developed by an interdisciplinary work group using a process that combined evidence- and consensus-based approaches. Because scientific research in the long-term care population is limited, many recommendations are applied research of older adults and geriatric medicine. Some recommendations are based on the expert consensus opinion of practitioners and geriatric experts in the field.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Timely recognition of acute stroke
- Implementation of appropriate strategies to prevent complications of stroke
- Improved monitoring for and recognition of acute complications of stroke
- Minimization of acute stroke complications
- Improved control of modifiable risk factors for stroke
- Improved utilization of appropriate anticoagulant and antithrombotic therapies
- Improved quality of life for patients with stroke
- Improved documentation of patient choices about assessments and treatments
- Decreased readmissions of patients undergoing acute stroke rehabilitation
- Increased percentage of patients admitted for acute stroke rehabilitation who are discharged home

Potential Harms

- Hospital transfer of long-term care stroke patients is associated with the following risks:
    - Deconditioning
    - Delirium
    - Pressure ulcers
    - Use of restraints

    - Use of indwelling urinary catheters
    - Inappropriate medications for frail elderly people, causing adverse drug effects
    - Other adverse iatrogenic events
- Treatments that are based on the identification of swallowing abnormalities could plausibly reduce the frequency or severity of aspiration and thus decrease aspiration pneumonia. Most such treatments, however, have not been proven effective in clinical trials. Common compensatory strategies, such as chin-tuck, positioning, dietary modifications, and thickened liquids, may improve some symptoms or findings on videofluoroscopy, but these intermediate outcomes do not necessarily translate into reductions in the incidence of aspiration pneumonia. In addition, modified diets and thickened liquids have potential adverse effects including weight loss, dehydration, and reduced quality of life.
- Adverse effects of medications

See also Appendix 1 in the original guideline document: "Modifiable Risk Factors for TIA and Stroke: Interventions, Treatment Goals, and Strategies for Monitoring Adverse Drug Effects."

Contraindications

Contraindications

Absolute Contraindications to Warfarin

- Current active bleeding
- Platelet count <50,000
- Blood pressure consistently >160/90
- Noncompliance with medication or monitoring

Relative Contraindications to Warfarin

- Ethanol ≥2 oz/day
- Nonselective nonsteroidal anti-inflammatory drug (NSAID) without gastric cytoprotection (e.g., proton pump inhibitor [PPI], misoprostol)
- Extreme functional disability
- Poor short-term prognosis due to malignancy, advanced chronic disease

Qualifying Statements

Qualifying Statements

- This clinical practice guideline is provided for discussion and educational purposes only and should not be used or in any way relied upon without consultation with and supervision of a qualified physician based on the case history and medical condition of a particular patient. The American Medical Directors Association (AMDA), its heirs, executors, administrators, successors, and assigns hereby disclaim any and all liability for damages of whatever kind resulting from the use, negligent or otherwise, of this clinical practice guideline.
- The utilization of AMDA's Clinical Practice Guideline does not preclude compliance with State and Federal regulation as well as facility policies and procedures. They are not substitutes for the experience and judgment of clinicians and caregivers. The Clinical Practice Guidelines are not to be considered as standards of care but are developed to enhance the clinician's ability to practice.
- Long-term care facilities care for a variety of individuals, including younger patients with chronic diseases and disabilities, short-stay patients needing postacute care, and very old and frail individuals suffering from multiple comorbidities. When a workup or treatment is suggested, it is crucial to consider if such a step is appropriate for a specific individual. A workup may not be indicated if the patient has a terminal or end-stage condition, if it would not change the management course, if the burden of the workup is greater than the potential benefit, or if the patient or his or her proxy would refuse treatment. It is important to carefully document in the patient's medical record the reasons for decisions not to treat or perform a workup or for choosing one treatment approach over another.

Implementation of the Guideline

Description of Implementation Strategy

The implementation of this clinical practice guideline (CPG) is outlined in four phases. Each phase presents a series of steps, which should be carried out in the process of implementing the practices presented in this guideline. Each phase is summarized below.

I. Recognition
   - Define the area of improvement and determine if there is a CPG available for the defined area. Then evaluate the pertinence and feasibility of implementing the CPG.

II. Assessment
   - Define the functions necessary for implementation and then educate and train staff. Assess and document performance and outcome indicators and then develop a system to measure outcomes.

III. Implementation
   - Identify and document how each step of the CPG will be carried out and develop an implementation timetable.
   - Identify individual responsible for each step of the CPG.
   - Identify support systems that impact the direct care.
   - Educate and train appropriate individuals in specific CPG implementation and then implement the CPG.

IV. Monitoring
   - Evaluate performance based on relevant indicators and identify areas for improvement.
   - Evaluate the predefined performance measures and obtain and provide feedback.

Implementation Tools

Audit Criteria/Indicators

Chart Documentation/Checklists/Forms

Clinical Algorithm

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

Staying Healthy

IOM Domain

Effectiveness

Timeliness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2005 (revised 2011)

Guideline Developer(s)

American Medical Directors Association - Professional Association

Guideline Developer Comment

Organizational participants included:

- American Association of Homes and Services for the Aging
- American College of Health Care Administrators
- American Geriatrics Society
- American Health Care Association
- American Society of Consultant Pharmacists
- Direct Care Alliance
- Gerontological Advanced Practice Nurses Association
- National Association of Directors of Nursing Administration in Long-Term Care
- The American Medical Directors Association (AMDA) Foundation

Source(s) of Funding

American Medical Directors Association

Guideline Committee

Clinical Practice Guideline Steering Committee

Composition of Group That Authored the Guideline

Clinical Practice Committee Chair: Charles Cefalu, MD, MS

Project Chair: William D. Smucker, MD, CMD

Steering Committee Members: Charles Cefalu, MD, MS (*Chair*); Hosam Kamel, MD, CMD (*Vice-Chair*); Debra Bakerjian, PhD, RN, FNP; Judith L. Beizer, PharmD, CGP, FASCP; Sherrie Dornberger, RNC, CDONA/LTC; Marianna Grachek, MSN, CNHA, CALA; Sandra Fitzler, RN; Evvie F. Munley; Jonathan Musher, MD, CMD; Kevin W. O'Neil, MD, FACP; Barbara Resnick, PhD, CRNP; Leonila Vega

Original Panel Members: *William D. Smucker, MD, CMD, *Chair*; Anne Marie Barnett, RNC; Stanley N. Cohen, MD; Tony Cody, CNA; Suzanne Cryst, RD, LD; Jan Gregory-Geoffrey, MA, CCC-SLP; Christopher Herman, MD, CMD; Robert Karp, MD, CMD; Susan Kraus, CRNP, MSN; Malcolm Man-Son-Hing, MD, MSc, FRCPC; *Harlan Martin, RPh, CCP, FASCP, *Facilitator*; Alan Mason, RPh, FASCP; Kathleen Neill, DNSc, RN; Ann Nusser, OTR/L; David Sperling, MD; Norma D. Todd, LPN, RN; Mitchell Wilson, MD; Mary Kathryn (Kay)

Wing, PT, DPT, NCS, GCS

Contributors to 2011 Update: William D. Smucker, MD, CMD, *Chair*; *Charles Cefalu, MD, MS, *Project Chair*; *Hosam Kamel, MD, CMD, *Project Vice-Chair*; Norda A. Bellantoni, RN, CNHA, CAS, CALA; Sheila G. Capitosti, RN-BC, NHA, MHSA; Danielle Hammer, ACSW, NHA; Kathleen Michael, RN, PhD; Gail Robinson, RN, RAC-CT; Robert P. Smith, MD, CMD; Michelle Tristani, ST; Jennifer Serafin, RN, GNP

*Steering Committee Member

Technical Writer: Caroline Polk

American Medical Directors Association (AMDA) Staff: Jacqueline Vance, RN, C. CDONA/LTC, CPG Project Manager, Director of Clinical Affairs

Financial Disclosures/Conflicts of Interest

All contributors must submit an Accreditation Council for Continuing Medical Education (ACCME) approved disclosure form prior to being accepted as a volunteer member of the guideline workgroup. This disclosure form is reviewed by the chair of the American Medical Directors Association (AMDA) Clinical Practice Committee. If any conflicts are perceived, that person is not accepted to be part of the workgroup.

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: American Medical Directors Association (AMDA). Stroke management and prevention in the long-term care setting. Columbia (MD): American Medical Directors Association (AMDA); 2005. 42 p.

Guideline Availability

Electronic copies: None available.

Print copies: Available from the American Medical Directors Association, 10480 Little Patuxent Pkwy, Suite 760, Columbia, MD 21044. Telephone: (800) 876-2632 or (410) 740-9743; Fax (410) 740-4572. Web site: www.amda.com

Availability of Companion Documents

Step 17 in the original guideline document provides examples of quality-of-care indicators. The appendices to the original guideline document contain risk assessment checklists.

Patient Resources

None available

NGC Status

This summary was completed by ECRI on June 29, 2005. The information was verified by the guideline developer on August 8, 2005. This summary was updated by ECRI on March 6, 2007 following the U.S. Food and Drug Administration (FDA) advisory on Coumadin (warfarin sodium). This summary was updated by ECRI Institute on September 7, 2007 following the revised U.S. Food and Drug Administration (FDA) advisory on Coumadin (warfarin). This summary was updated by ECRI Institute on January 4, 2010 following the U.S. Food and Drug Administration advisory on Plavix (Clopidogrel). This summary was updated by ECRI Institute on May 14, 2010 following the U.S. Food and Drug Administration advisory on Plavix (clopidogrel). This NGC summary was updated by ECRI Institute on October 31, 2011. The updated information was verified by the guideline developer on November 29, 2011.

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